



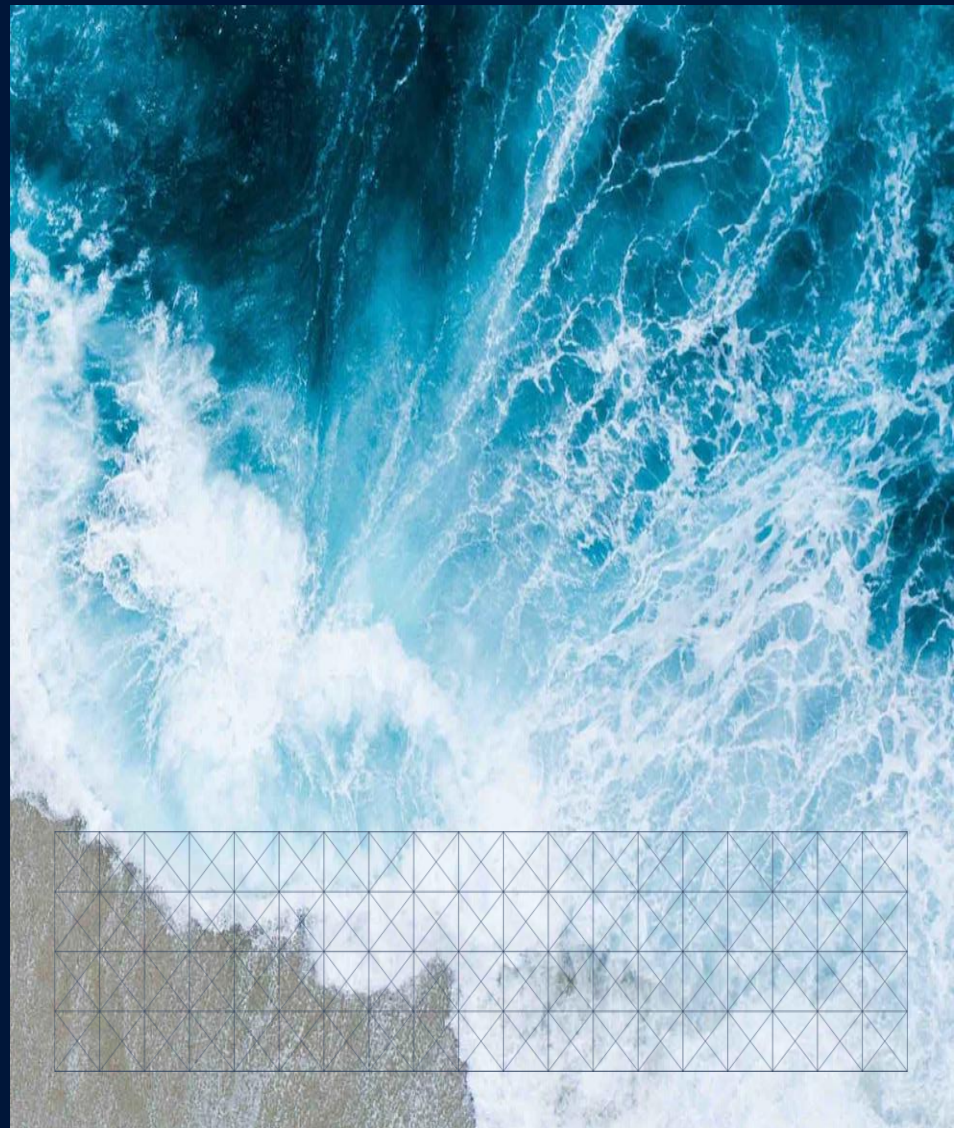
KONGSBERG

YARA BIRKELAND A GLOBAL GAME CHANGER

EV EXPO 2019

Jeju

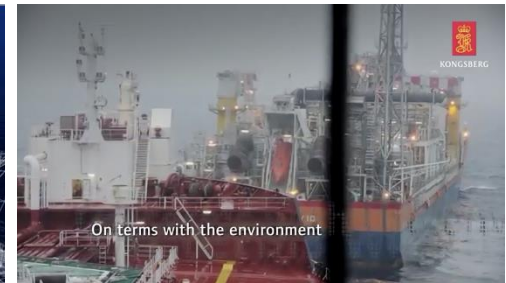
09.05 2019



Carl Magne Rustand, Operation Manager Korea



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Sustainable Business Cases



SOCIAL



ENVIRONMENT



ECONOMIC



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Autonomy is the means, not the target



Crew

● Classic feeders

● Autonomous



Port
Handling

● Classic feeders

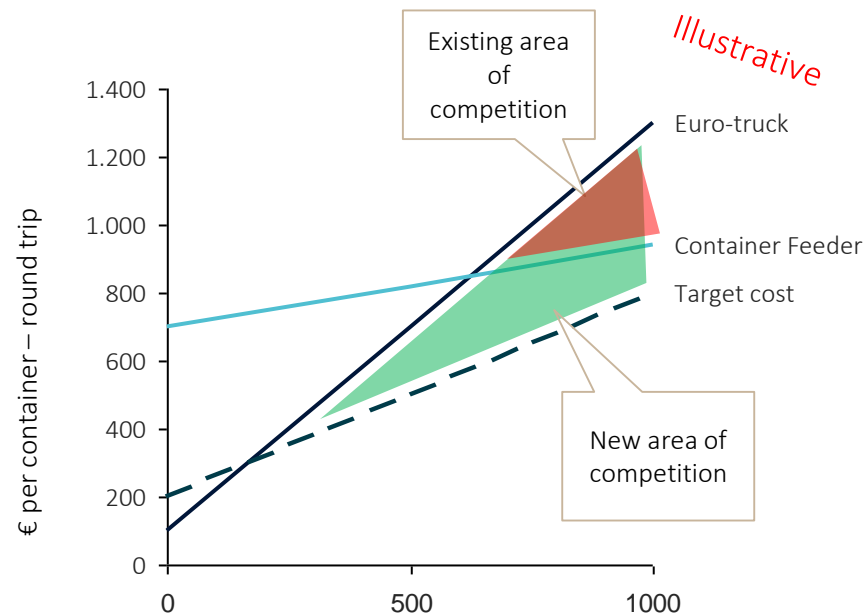
● Autonomous



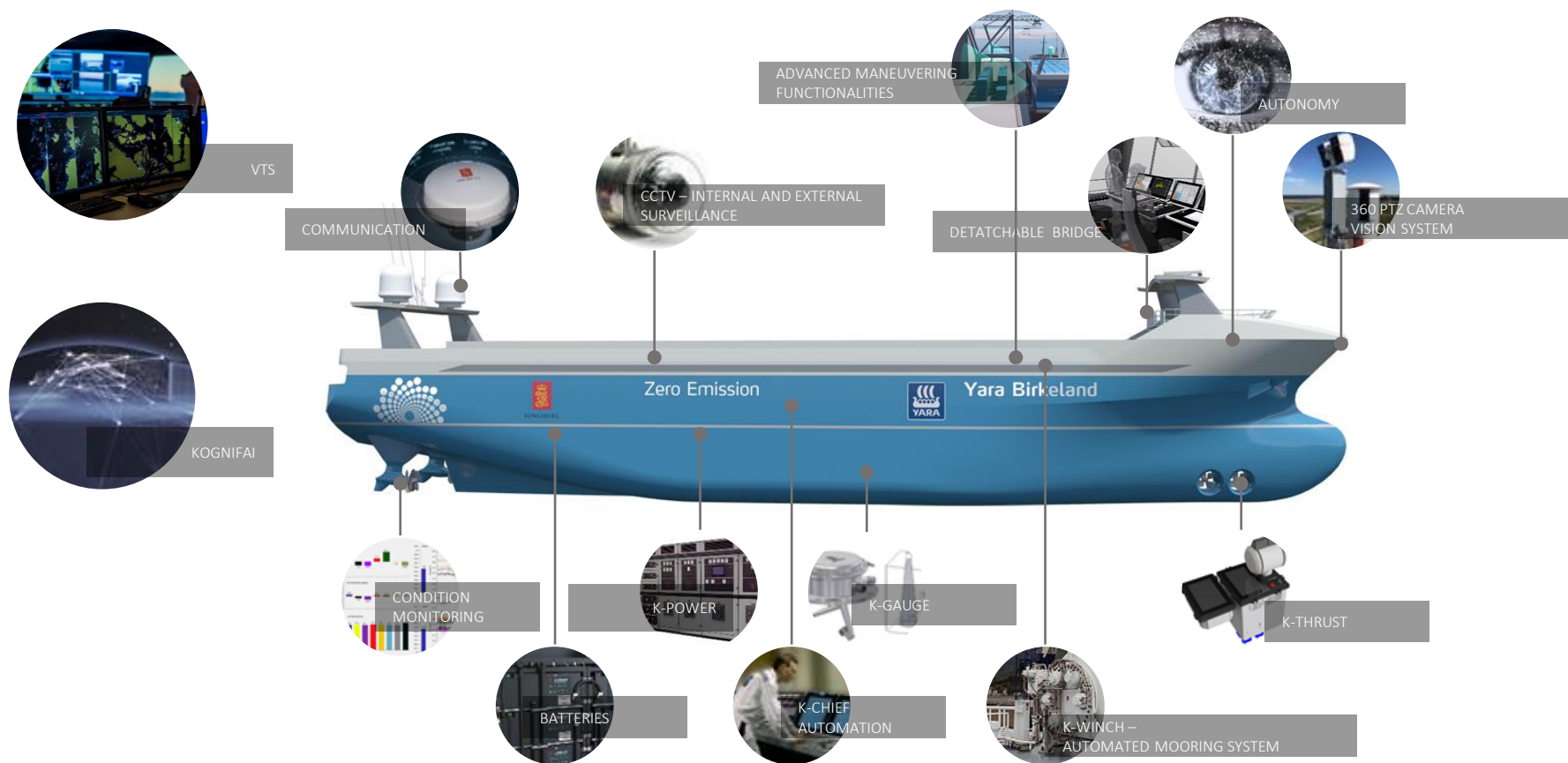


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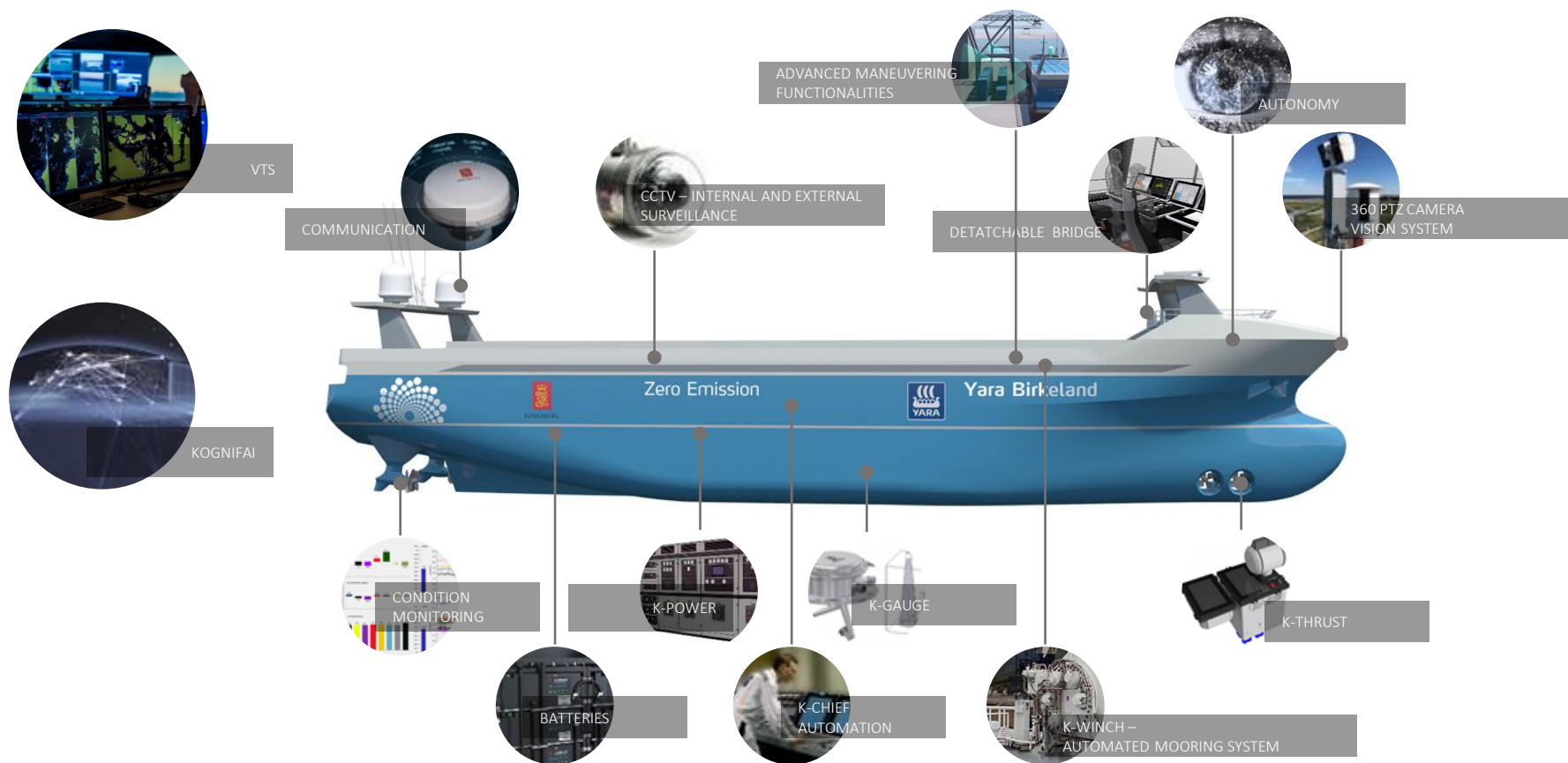
Competing with roads in Short Sea Shipping requires autonomous solutions both on vessel and in ports



Integrated solutions



Integrated solutions





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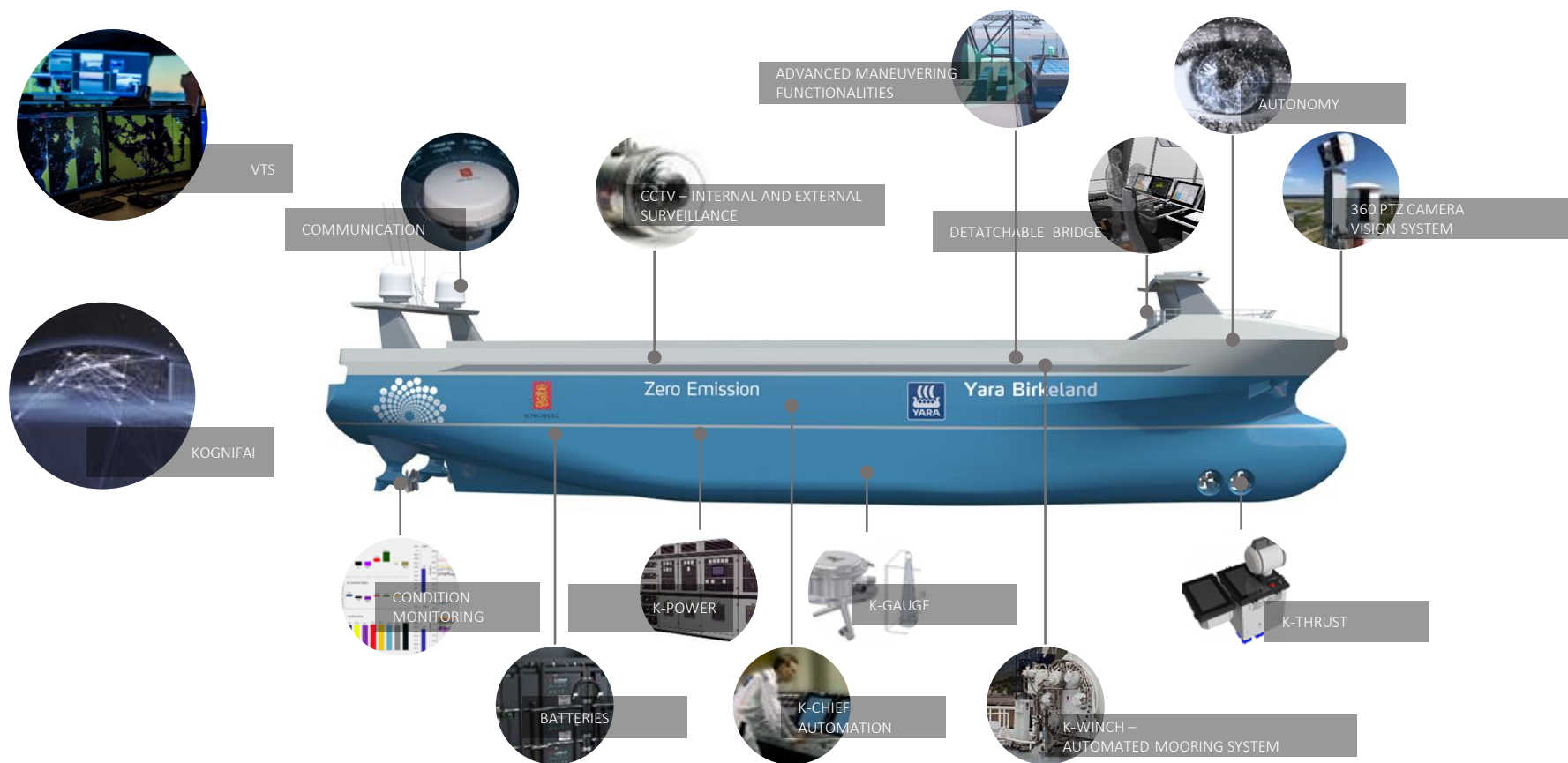


WORLD CLASS — Through people, technology and dedication

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Integrated solutions

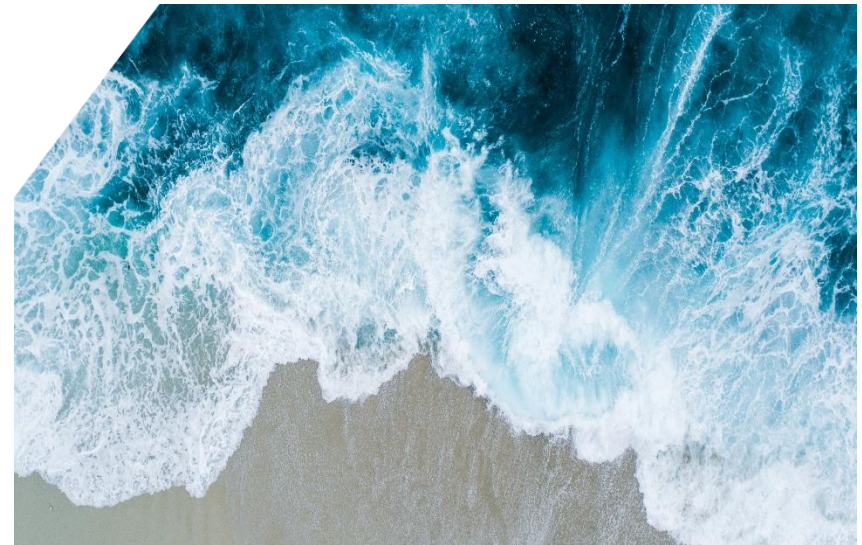




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Yara Birkeland

Length	80 m
Width	15 m
Draught	6 m
Service speed	8 knots
Cargo	120TEU
Deadweight	3.200 mt
Propulsion system	Electric
Battery pack	7 MWh





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Sailing Area

Ports

Herøya-Brevik 7nm

Herøya-Larvik 30nm

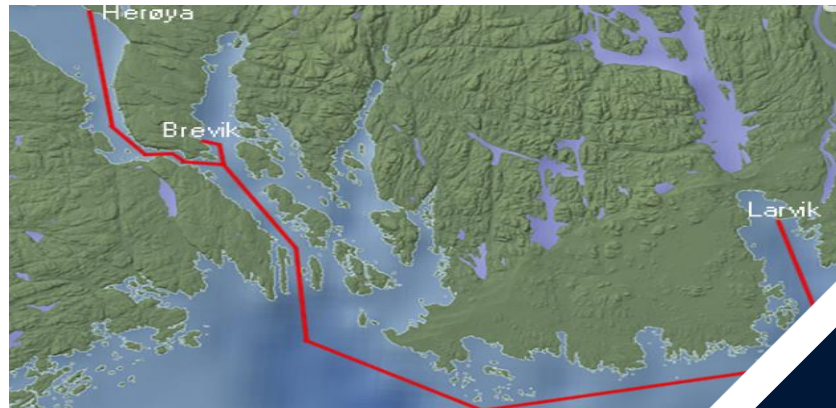
Infrastructure

VTS

Test area

Loading/Discharging

Charging



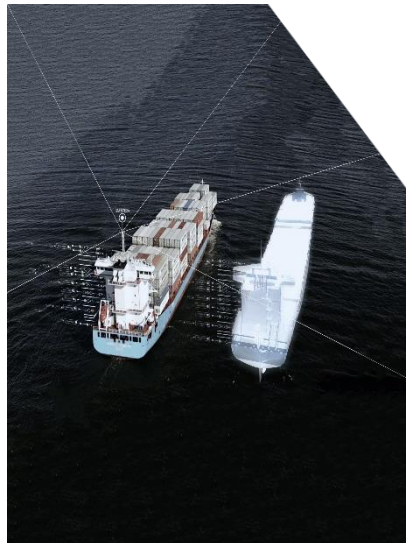


KONGSBERG

Shore Control Centre SCC

Captain
Chief Engineer

Monitor operation
Monitor equipment Approve
voyage plan
Approve loading
Initiate voyage
Voice communication
Safe state
Remote Control





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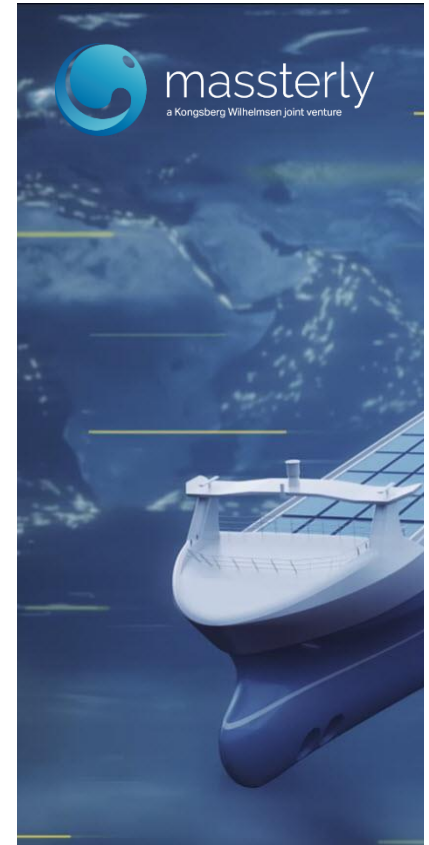
Partnership for the operational challenge

Kongsberg

Automation
Digitalization
Autonomy
Cyber Security

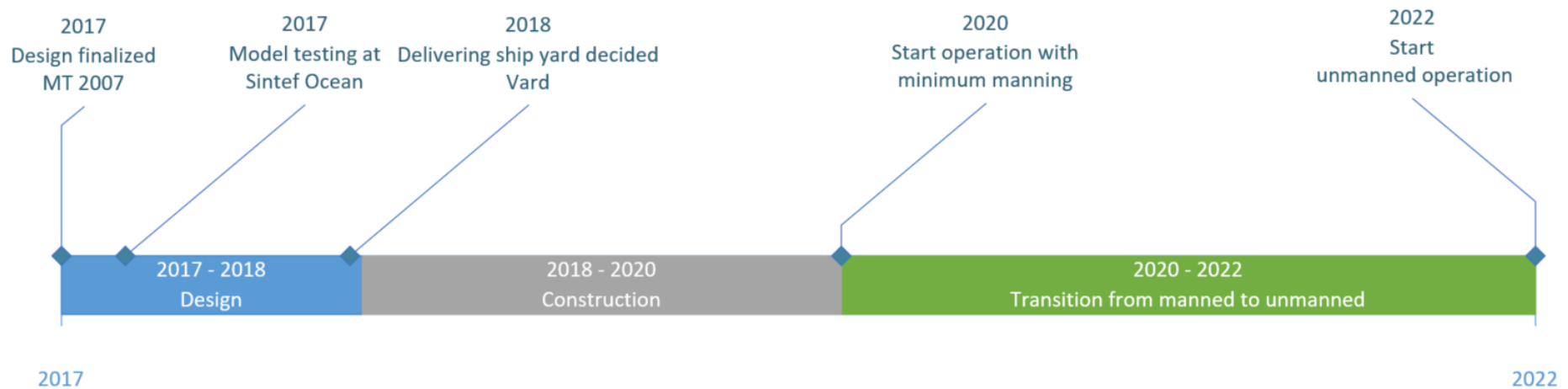
Wilhelmsen

Vessel Operation
Logistic Solutions
Terminal Operator
Global Network





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Achievement through collaboration



Sjøfartsdirektoratet
Norwegian Maritime Authority



KONGSBERG



SAMFERDSELSDEPARTEMENTET



KYSTVERKET



HERØYA
INDUSTRI PARK

ENOVA

FFI Forsvarets
forskningsinstitutt
Norwegian Defence Research Establishment



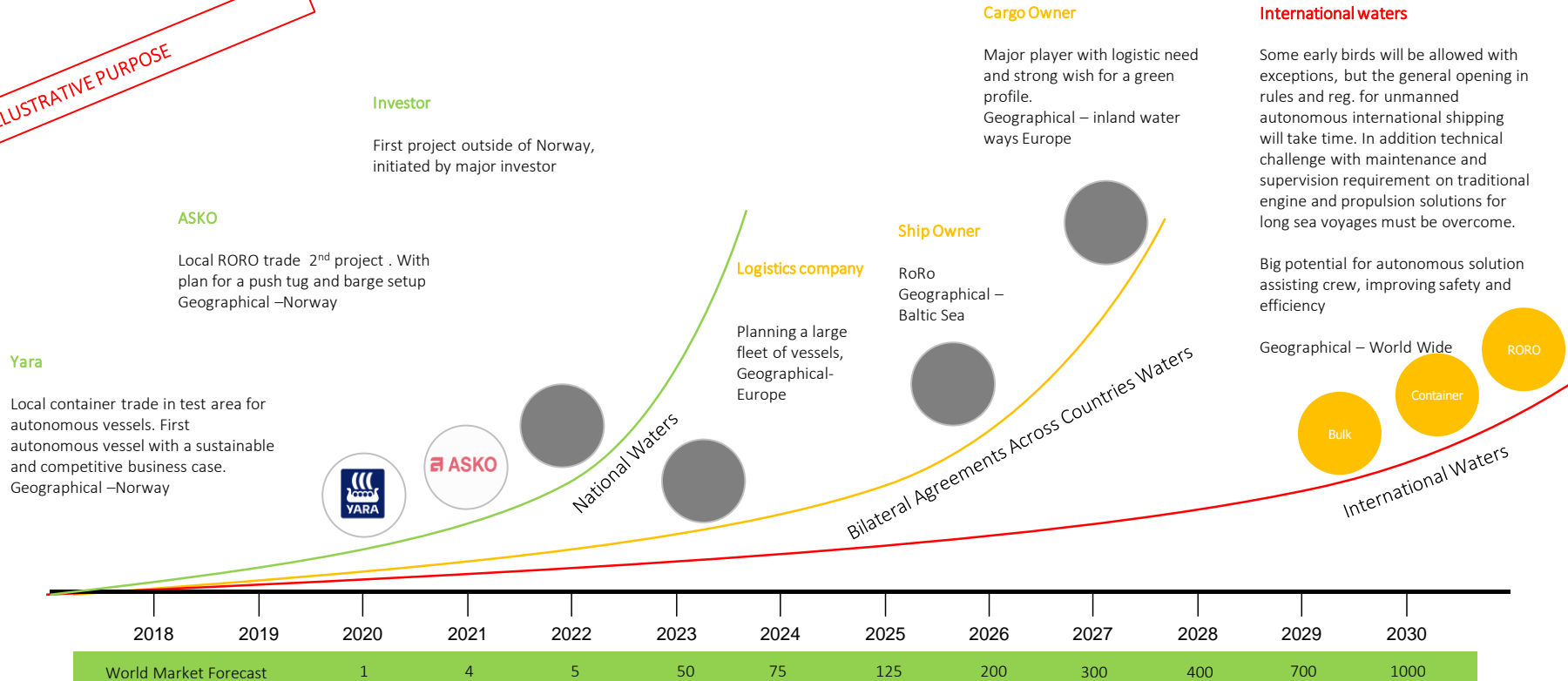


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Kongsberg view on Market Forecast

Driven by sustainable business cases and development of regulatory acceptance

FOR ILLUSTRATIVE PURPOSE



Coming Projects

Yara Birkeland
Container



Robert Allen
FiFi tug



Auto
Feeder



ASKO
RoRo



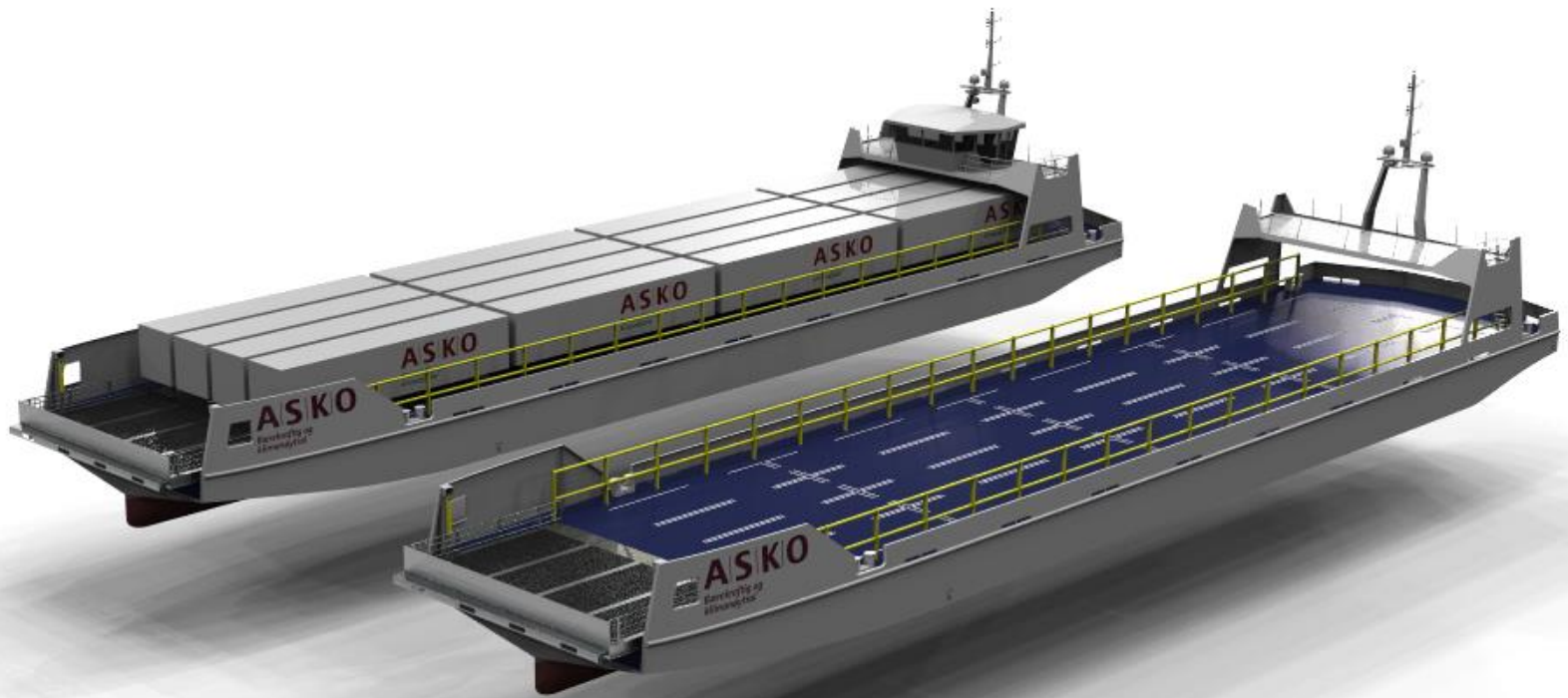
Auto
PSV





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Coming Projects

Yara Birkeland
Container



Robert Allen
FiFi tug



Auto
Feeder



ASKO
RoRo



Auto
PSV





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Maximizing performance by providing
THE FULL PICTURE

caru@kongsberg.com

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